

## A Simplified approach for management of flabby ridges – A case report

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### Introduction

The quality of the prosthesis is best weighed by its virtue of preserving the remaining tissues. In spite of delivering a good prosthesis, poor maintenance and inadequate tissue rest and lack of patient co-operation to attend the recall visits can cause extensive damage over time. The current article describes a case report entailing the sequale of denture wearing.

One such sequale is replacement of alveolar bone by hyperplastic soft tissues<sup>(1)</sup> termed as 'flabby' ridge. It is a tissue adaptation to overcome the changes caused by residual ridge resorption in providing adequate support which relining procedures would otherwise do. Hence, a prosthesis should be modified according to the changing oral environment.

The hyperplastic soft tissues fail to provide adequate support rendering the prosthesis progressively unstable. This causes displacement of underlying soft tissues during function leading to altered denture position, loss of peripheral seal, loss of stability, compromised esthetics and function.<sup>(2)</sup> In extreme cases, pain results as the mucosa becomes pendulous and often gets pinched between the denture and spinous alveolar ridge.<sup>(3)</sup>

Although it is a multifactorial phenomenon, (Listed in Table 1) the main cause seems to be chronic irritation from ill-fitting prosthesis. Prevalence is seen 24% in maxilla & 5% in mandible.<sup>(2)</sup>

Histological sections show marked inflammation, fibrosis and resorption of underlying bone. The connective tissue is densely collagenised with loosely arranged fibrous tissue.<sup>(4)</sup>

**Table 1: Etiological factors for flabby ridges<sup>(2,3,5,6)</sup>**

- Long term denture wear without maintenance
- Trauma from denture base
- Ill-fitting dentures
- Malocclusion
- Poor systemic health
- Unplanned extractions
- Ridge resorption
- Aberrant forces on prosthesis
- Combination syndrome

Inspection may be elusive as the color and texture of the tissues are similar to that of normal unless swollen. Thorough palpation reveals freely movable tissue that is rolled or pendulous.<sup>(2)</sup> A detailed case history reveals the underlying cause. Treatment plan should start eliminating the etiological factor. (Table 2)

The abused tissues must be given adequate rest before proceeding to the definitive treatment by discontinuing the prosthesis or correction of patient's existing dentures or conditioning them or by fabricating an interim denture.<sup>(3)</sup>

**Table 2: 'Reversal of changes'<sup>(6,7)</sup>**

- Surgical removal of hypertrophied tissues.
- Correction of occlusal disharmony.
- Soft tissue massage.
- Removal of dentures for at least 8 hours a day.
- Nutritional supplements.

Flabby tissues are managed by their severity.<sup>(7)</sup>

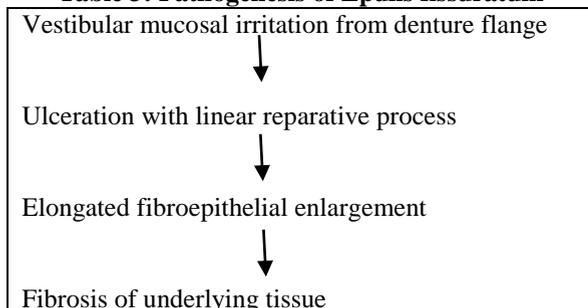
1. Surgical excision is advocated for pendulous ridges interfering with denture stability.
2. Implant supported prosthesis if adequate residual bone is present.
3. Conventional prosthesis without surgical intervention can be made by modifying the impression techniques; use of soft liners & tissue conditioners or providing liquid supported dentures.<sup>(8)</sup>

Chronic denture usage also causes reactive fibrous hyperplasia commonly called as epulis fissuratum. (epulis = any gum swelling). It is also known as inflammatory fibrous hyperplasia, denture injury tumour, denture epulis or denture induced hyperplasia. It is defined as a curtain like fold of excessive tissue associated with flange of the denture.<sup>(8)</sup>

It is characterized by growth of multiple redundant tissue folds into which the denture flange fits. The tissue is raised, sessile, lobulated with smooth surface and normal colour but becomes ulcerated with trauma. Multiple parallel masses are seen (redundant tissue). Palpation reveals the mucosa to be firm and rubbery due to underlying fibrosis.<sup>(9)</sup>

Prevalence is seen in 4 among 1000 adults. Females are more commonly affected. It is the 11<sup>th</sup> most common mucosal mass.<sup>(9,10)</sup>

**Table 3: Pathogenesis of Epulis fissuratum**



The site of its occurrence (more commonly in the anterior facial surface) is common for other lesions and should be differentially diagnosed. (Table 4)

**Table 4: Differential diagnosis of Epulis fissuratum<sup>(11)</sup>**

Squamous cell carcinoma	Induration, persistent pain inspite of trauma is present
Pyogenic granuloma	Sudden in onset following formation of blood clot due to injury or surgery. Persist as a nodule of granulation tissue.
Mucocele	Nodules are superficial and fluctuant
Fibrous lumps and neoplasms	Absence of central groove separating soft tissue folds into which the denture base fits.

Prolonged denture usage may cause development of new parallel masses and ulceration. Malignant transformation is not seen. Microscopically, the tissue is composed of cellular, inflamed fibrous connective tissue with chronic inflammatory cells in stroma. The surface epithelium is hyperplastic and ulcerated.

Treatment should include excision of the mass following the correction of denture border. Excision can be done either by conventional blade surgery, Laser<sup>(11)</sup>electro surgery, or by cryosurgery.<sup>(12)</sup> The excised tissue should be sent for histological examination.

### Case Report

A 46 year old female patient walked into the Department of Prosthodontics, SIDS, Guntur, Andhra Pradesh with a chief complaint of “loosening of dentures.” Patient had been using dentures constantly since 10 years despite of loss of abutment teeth in the mandibular arch.

Examination of the prostheses revealed that maxillary denture was fractured, with the fracture line extending from anterior region to posterior border. (Fig 1) It was improperly repaired leaving rough surface on the intaglio surface. (Fig. 2)

Fracture was also seen in the distobuccal border. The mandibular treatment partial denture lacked support from the adjacent teeth and derived support from the soft tissue lesion itself. (Fig.7) On thorough clinical examination, it was found that patient has pendulous flabby ridge in relation to maxillary anterior region (Fig. 4) and epulis fissuratum in the mandibular labial vestibular region. (Fig. 6)





Surgical excision was performed under local anesthetic and the mass was sent for histopathological examination. The laboratory diagnosis suggested the mass showing epithelial hyperplasia. (Fig. 8) After arriving to the final diagnosis of epulis fissuratum, patient was informed the same and follow up visits were attended till tissue healing was found satisfactory. (Fig. 9)

Treatment plan included

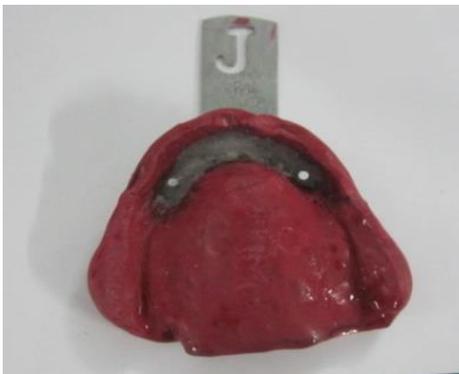
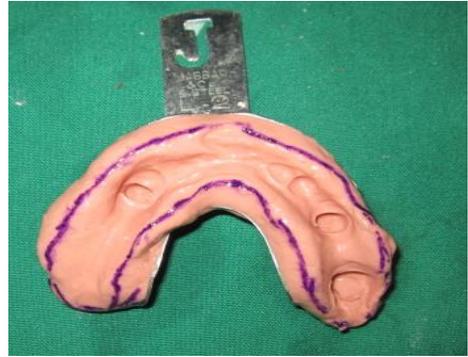
- Patient education and motivation
- Discontinuing the use of existing prosthesis
- Tissue massage and warm saline rinses
- Nutritional supplements

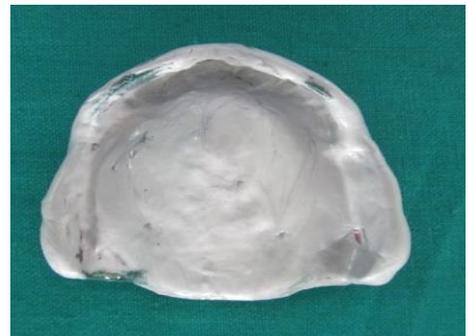
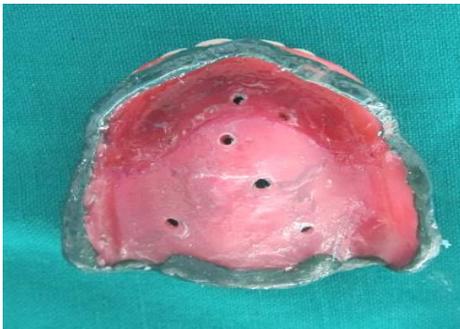


**Prosthesis fabrication:** The maxillary impression was made using impression compound in a non-perforated metal stock tray; area entailing the flabby tissue in the impression was marked (Fig. 10) and removed to create a window. Stock tray was provided holes for escape of excess material. The impression compound was scraped enough 2mm from the sulcus. (Fig. 11) Over this, a mucostatic impression was made using free flowing irreversible hydrocolloid. (Fig. 12) Movements were made to record tissues in function. The mandibular impression was made using irreversible hydrocolloid (Fig. 13). Casts were poured with type II gypsum.

Denture bases were fabricated using autopolymerizing resin. Maxillary denture base was relieved with modeling wax sufficient enough to accommodate the flabby tissue in uncompressed state. (Fig. 15) After ensuring the denture bases stability & retention in the patient's mouth, jaw relations were recorded. Maxillary occlusal rim was mounted using facebow transfer; mandibular rim was mounted after bite registration in centric relation.

Teeth arrangement was done followed by wax try-in for the verification of occlusion, esthetics, etc. (Fig. 14) the wax spacer over flabby ridge was removed, border molding was done with green stick compound, (Fig. 16) wash impression was made with light body polyvinyl siloxane impression material. (Fig. 17)





The patient was made to occlude with light pressure so as to avoid any increase in the vertical dimension.

The dentures were processed. After finishing and polishing, during the insertion stage, tissue conditioning material was added onto the impression surface of maxillary denture. Patient was advised to attend the recall visits.

15 days later, the maxillary denture was flaked; relining material was removed & processed with heat

cure acrylic. The denture was finally inserted; occlusal discrepancies were verified and corrected. (Fig. 18) Recall visits were scheduled after 24 hours and 1 week. No clinical signs of inflammation were observed. (Fig. 19)

Advantages of this technique:

- Additional steps and special impression procedures not required.
- Low viscosity of tissue conditioning material ensures adequate rest for flabby tissues and allows functional tissue relining.
- Low cost of treatment with satisfactory results.

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